UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,227	12/28/2000	Darwin A. Engwer	3239P071	9335

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EXAMINER
PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
2665	14

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>03 November 2003</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>2-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>2-30</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>03 November 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1.   In the Amendment filed November 3, 2003, applicant has canceled claim 1, added new

claims 25-30, and amended claims 2-5, 10, 14, 15 and 20-22 to correct minor informalities and to

include further limitations in an attempt to overcome the previous prior art rejections. Applicant

has also provided a new drawing sheet comprising Figures 4 and 5, wherein Figure 4 now

includes the label "Prior Art", and has argued that Figure 1 is not prior art and therefore should

not be labeled as such. Applicant has not addressed the objections to Figures 5 and 10.

In response to the Amendment, applicant has overcome the previous objections to claims

and rejection of claims under 35 U.S.C. 112. Also, Figures 1 and 4 are no longer objected to.

However, Figures 5 and 10 remain objected to for the same reasons discussed in the previous

office action.

Response to Arguments

2.   Applicant's arguments with respect to claims 2-24 have been considered but are moot in

view of the new ground(s) of rejection.

Specification

3.   The disclosure is objected to because of the following informalities: "AP IP information

1030" (page 9, lines 24-25) should be changed to "AP ID information 1030" or "AP

identification information 1030" to remain consistent with Figure 10. Appropriate correction is required.

Drawings

4.   Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (e.g., see specification, page 7, lines 14-19). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5.   The drawings are objected to because in Figure 10, the labels "TIM", "PRELIMINARY FCS 1050", "TEST PATTERN 1060" and "FCS 1070" should not be included in the range identified by the label "1010" in order to remain consistent with the specification (e.g., see page 9, lines 25-32 wherein these elements, with exception to TIM, are included "after the additional information elements 1010", wherein TIM is included before the additional information elements 1010). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

6.   Claim 28 is objected to because of the following informalities: the language of claim 28 is unclear. Specifically, "as to whether a count ... exceeding a predetermined threshold" is an incomplete thought. Applicant may clarify the claim by including the phrase "is reached", or an

equivalent statement, after "exceeding a predetermined threshold"; or alternatively changing

"exceeding" to "exceeds". Appropriate correction is required. However, for the purpose of the

following office action, the term "exceeding" is interpreted as "exceeds".

Claim Rejections - 35 USC § 103

7.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

8.   Claims 2, 3, 5-8, 10, 12-16, 18-20, 22, 24-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,067,297 to Beach in view of the article entitled, "A New

Efficient access Protocol for Integrating Multimedia Services in the Home Environment" (IEEE,

June 1999) by Koutroubinas et al.

Regarding claims 2, 7 and 20, Beach teaches a method and access point logic comprising:

broadcasting a delivery traffic indication message DTIM beacon (e.g., see col. 11, lines 13-22),

the DTIM beacon having at least a traffic indicator bit that is set (e.g., DTIM field within beacon

frames are set, see col. 11, lines 19-21) to denote data is to be transmitted after the DTIM beacon

(i.e., access point has data queued for future transmission, see col. 11, lines 21-22), and

broadcasting (e.g., see col. 11, lines 57-58) the data that comprises at least load balancing

information (e.g., see col. 16, lines 42-46 regarding hoptick field; see also col. 1, lines 48-60

regarding hopping pattern, timing information, and associated mobile units).

However, Beach may not specifically disclose the DTIM beacon is a special beacon, and

may not specifically disclose the bit in the field denotes a specific transmission of a data frame

after the beacon.

Koutroubinas teaches a similar method and further, specifically teaches a special DTIM

beacon (e.g., Beacon B, see page 483, column 2, third-fifth paragraphs) comprises a field having

a traffic indicator bit (e.g., Network Allocation Vector NAV value) that is set to denote a

transmission of a data frame after the special beacon. The teachings of Koutroubinas provide

dynamic bandwidth allocation for improved system efficiency (e.g., see page 486, section "IV.

Conclusion"). Thus, at the time of the invention it would have been obvious to one of ordinary

skill in the art to apply the teachings of Koutroubinas to the method of Beach in order to provide

the method of Beach with dynamic bandwidth allocation for improved system efficiency.

Regarding claim 3, 29 and 30, Beach teaches the system is configured in accordance with

the IEEE 802.11 standard protocol (e.g., see col. 3, lines 9-11).

Regarding claims 5, 6 and 24, Koutroubinas teaches that each Beacon packet defines the

timing of the transmission of data traffic, and therefore, the teachings of Koutroubinas

encompass data frames being broadcast after a definitive time period has elapsed after the

broadcasting of the special beacon (e.g. see page 483, column 2, fourth paragraph, lines 5-8). As

discussed above, the teachings of Koutroubinas provide dynamic bandwidth allocation for

improved system efficiency (e.g., see page 486, section "IV. Conclusion"). Thus, at the time of

the invention it would have been obvious to one of ordinary skill in the art to apply the teachings

of Koutroubinas to the method of Beach in order to provide the method of Beach with dynamic

bandwidth allocation for improved system efficiency.

Further, regarding claim 6, Koutroubinas may not specifically teach the data frame is

broadcast immediately after the broadcast of the special beacon. Rather, Koutroubinas teaches a

preferred embodiment in Figure 2a wherein Short InterFrame Space SIFS is provided, along with

a first Poll packet P, prior to transmission of data traffic ISO1. The preferred teachings of
Koutroubinas provide improved synchronization means. However, if bandwidth efficiency is
deemed more desirable in a system than such improved synchronization, one of ordinary skill in
the art would be motivated to implement the method of Beach in view of Koutroubinas by
broadcasting data traffic immediately after the broadcast of the special beacon in order to
increase bandwidth efficiency. Thus, for systems wherein bandwidth efficiency is deemed more
desirable than improved synchronization, at the time of the invention it would have been obvious
to one of ordinary skill in the art to implement the method of Beach in view of Koutroubinas by
broadcasting data traffic immediately after the broadcast of the special beacon in order to
increase bandwidth efficiency.

Regarding claims 8 and 22, Beach teaches the load balancing information is computed
from information pertaining to characteristics of wireless units in communication with the access
point (e.g., see col. 1, lines 52-56 regarding indication of how many mobile units are already
associated with the access point).

Regarding claims 10, 15 and 16, Beach in view of Koutroubinas teach the method
discussed above regarding claims 2 and 20, and further, Beach teaches providing an access point
(e.g., access point AP, mobile unit MU, extended access point EAP, see col. 4, line 63 – col. 5,
line 27) for the broadcasting step, and Beach teaches that the beacon further comprises an access
point name (e.g., AP_ID, see col. 11, line 3), an access point identifier (e.g., identifying address,
see col. 1, lines 47-48) and an associated first frame check sequence (e.g., CRC, see col. 12, line
54 – col. 13, line 4).

Regarding claims 12-14, 18 and 19, Beach teaches a beacon comprises a DTIM and a

TIM (e.g., see col. 11, lines 13-22), and Koutroubinas teaches more generally a special Beacon

(B) which may or may not comprise either of DTIM or TIM. As discussed above, the teachings

of Koutroubinas provide dynamic bandwidth allocation for improved system efficiency (e.g., see

page 486, section "IV. Conclusion"). Thus, at the time of the invention it would have been

obvious to one of ordinary skill in the art to apply the teachings of Koutroubinas to the method of

Beach in order to provide the method of Beach with dynamic bandwidth allocation for improved

system efficiency. Accordingly, the teachings of Beach in view of Koutroubinas encompass a

special beacon comprising one or both of a DTIM and TIM.

Regarding claim 25, Beach teaches the load balancing information comprises a count of a

number of wireless units currently associated with the access point (e.g., see col. 1, lines 52-56

regarding indication of how many mobile units are already associated with the access point).

Regarding claims 26 and 28, Beach teaches the wireless unit decides whether or not to

associate with a given access unit based on "any information the access unit may have issued

indicating how many mobile units are associated with it" (col. 1, lines 52-56). Thus, Beach

anticipates the load balancing information comprises an indicator as to whether the access point

is able to access one or more additional wireless units, since "any information" indicating the

number of mobile units that are/can be associated with the access unit encompasses "an

indicator" as recited in claim 26. Further, regarding claim 28, Beach similarly anticipates an

indicator which indicates whether a count of a number of wireless units exchanging data at a rate

exceeds a predetermined threshold (i.e., "any information" includes that which indicates the

threshold number of mobile units that can be associated with the access unit).

Regarding claim 27, Koutroubinas teaches a value (e.g., Beacon period) corresponding to a speed (e.g., frame rate) of an uplink from the access point to a backbone network at which the access point is coupled (e.g., see page 485, column 2, lines 4-5). As discussed above, the teachings of Koutroubinas provide dynamic bandwidth allocation for improved system efficiency (e.g., see page 486, section IV. Conclusion). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Koutroubinas to the method of Beach in order to provide the method of Beach with dynamic bandwidth allocation for improved system efficiency.

9.   Claims 4, 9, 11, 17, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach in view Koutroubinas, further in view of U.S. Patent No. 5,548,821 to Coveley.

Regarding claims 4, 9, 11, 17, 21 and 23, Beach in view of Koutroubinas teach the method as described above regarding claims 3 and 20, however, may not specifically disclose transmitting a static bit test pattern. Coveley teaches an adaptive system for self-tuning in a wireless communications environment whereby a static bit test pattern (e.g., test sequence) is transmitted and a receiver determines which operating frequency to select based upon the accuracy of the received test pattern with a known test pattern (e.g., see col. 1, line 62 – col. 2, line 55). The teachings of Coveley provide improved accuracy of transmission and overcomes prior art disadvantages such as receiving center operating frequency drift, and further, the teachings of Coveley permit transmitters to have slightly different carrier frequencies which more suitably accommodates systems with less precise transmission frequencies (e.g., see col. 2, lines 1-8). Thus, at the time of the invention it would have been obvious to one of ordinary skill

in the art to apply the teachings of Coveley to the method of Beach in view of Koutroubinas in order to provide improved accuracy of transmission and to accommodate a greater range of transmission frequency variance.

Further, regarding claims 11 and 17, Beach teaches the beacon comprises a frame check sequence (e.g., CRC, see col. 12, line 54 – col. 13, line 4). While Beach may not specifically disclose two frame check sequences, it is generally considered to be within the ordinary skill in the art to duplicate parts for a multiplied effect. St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7th Cir. 1977). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to include a second frame check sequence in the beacon of Beach in view of Koutroubinas in view of Coveley, since it is generally considered to be within the ordinary skill in the art to duplicate parts for a multiplied effect.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The

examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the

organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703.305.4750.

Justin M Philpott

HUY D. VU
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